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Non Invasive Imaging (Echocardiography, Nuclear, PET, MR and CT)

BLUNTED HEART RATE RESPONSE TO REGADENOSON IS AN INDEPENDENT PREDICTOR OF ALL-CAUSE MORTALITY IN PATIENTS WITH END-STAGE RENAL DISEASE: A SUBSTUDY OF THE ASSUAGE AND ASSUAGE-CKD TRIALS

Poster Contributions
Poster Hall B1
Sunday, March 15, 2015, 3:45 p.m.-4:30 p.m.

Session Title: Non Invasive Imaging: Advances in Nuclear Imaging
Abstract Category: 19. Non Invasive Imaging: Nuclear
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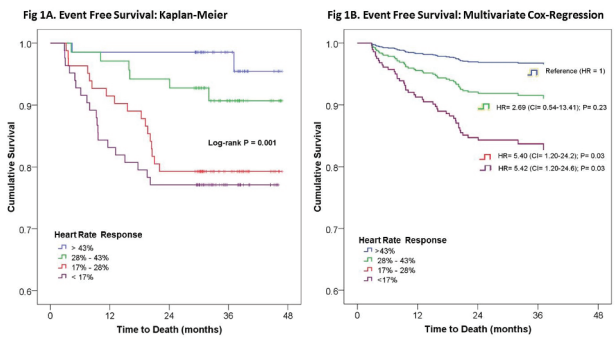
Background: Blunted heart rate response (HRR) to regadenoson has been shown to be predictive of poor outcome in patients undergoing SPECT myocardial perfusion Imaging (MPI). The predictive value of this marker has not been evaluated in high risk patients with end stage renal disease (ESRD).

Methods: ESRD patients enrolled in the ASSUAGE and ASSUAGE-CKD trials (aminophylline vs. placebo administered 2 min following regadenoson) were prospectively followed for all-cause mortality. HRR was defined as 100*(max HR - baseline HR) / (baseline HR). Patients were divided in 4 quartiles based on the HRR following regadenoson.

Results: A total of 303 patients with ESRD [mean age 54 ± 13 years, 64% men, 56% diabetes, 23% coronary artery disease (CAD)] were prospectively followed for 32 ± 10 months. Aminophylline did not impact HRR. There were 44 (14.5%) deaths. Blunted HRR was associated with a stepwise increase in mortality (log-rank P = 0.001), Fig 1A. After adjusting for age, sex, diabetes, CAD, summed stress score (SSS), and ejection fraction, an impaired HHR of <28% (2 bottom quartiles) was associated with 5 fold increase in mortality (HR= 5.4, P = 0.03), and added incremental value (X2 increase = 8.8, p = 0.03), Fig 1B. Similar findings were obtained after stratifying for the use of aminophylline versus placebo (interaction P value = 1.0).

Conclusion: Impaired HRR to regadenoson is a strong and independent predictor of all-cause mortality in ESRD patients undergoing SPECT MPI, irrespective of the use of aminophylline.



HR, hazard ratio; CI, 95% confidence interval
In Cox-regression model (Fig. 2) HR and CI were adjusted for age, gender, diabetes, CAD, summed stress score, ejection fraction